

The "tibiella" in Schmidt's *type*-specimens in the British Museum is not spined at the ends, nor is it in his descriptions and illustrations; but the "fine, pointed acerate" is microspined in them, although *not* described nor illustrated by him as such. But according to my observations generally, the spination of the ends of the "tibiella" is not constant, therefore of no specific value; while the microspination of the "fine acerate" can be seen only where it is strongly developed, and therefore, when otherwise is very likely to pass unnoticed.

9. *Tedania digitata*, var. *verrucosa*.

The same, but with the surface more generally convex and less lobate; the surface scattered over with small wart-like processes, and the colour, when fresh, stated to be "dull orange" and "venetian red" in the two specimens respectively. Besides being on a level with the surface, each little wart-like process terminates in a single vent, so that the structure is not like that described by Schmidt in his *Tedania suctorica* (Atlantisch. Spong. l. c.).

10. *Forcepia colonensis*, Carter ('Annals,' 1885, vol. xv. p. 110, pl. iv. fig. 2).

[To be continued.]

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VI.—On the Occurrence of Sowerby's Whale (*Mesoplodon bidens*) on the Yorkshire Coast. By THOMAS SOUTHWELL, F.Z.S., and WILLIAM EAGLE CLARKE, F.L.S.

On the 11th September last Prof. Turner communicated to the British Association, then assembled at Aberdeen, a paper on the anatomy of Sowerby's Whale, *Mesoplodon bidens*, Sowerby (= *M. Sowerbiensis*, Blainville), the material for which was mainly derived from the dissection of an individual obtained on the 25th of the preceding month of May, in Vaxter Voe, on the north-east portion of the main island of Shetland, which island had already become noted as having yielded a previous specimen of this species as well as two other Ziphioids. Seeing the interest which attaches to this rare Cetacean we have great pleasure in being able to record the occurrence of yet another individual of the same species, the first, we believe, which has been met with on the English coast; but we regret to add that, owing to the ignorance of its captors as to the value of their prize, the carcass was cast adrift before the occurrence came to our knowledge, and was thus irretrievably lost to science. This is the more to be

regretted from the fact that (mainly through the excellent use which Prof. Turner has made of recent opportunities), at present, more is known with regard to the skeleton and anatomy of the soft parts of Sowerby's Whale than of its external appearance, added to which there are still several points in the anatomy of this species which it would be desirable to solve.

On the 11th September last, on the same day on which Prof. Turner made the communication to the British Association before referred to, a Cetacean was left stranded in shallow water just inside Spurn Head, at a spot known as the Chalk Bank; as the tide receded the animal made great efforts to get off into deep water, and lashed up the sand with its tail till a large depression was formed in which it lay. Observing the commotion two men rowed up from a sloop which was riding at anchor in the entrance to the Humber near to the spot, and despatched it with their oars. The animal was seen alive by several persons, amongst them by Miss Rose Smith, daughter of the chief light-keeper at the Spurn, and Mr. T. Winson, the coxswain of the lifeboat 'Spurn,' to whom jointly we are indebted for the little information we have been able to glean; for, under the impression that it was a common Bottle-nose Whale (*Hyperoodon rostratus?*), a man named Hopper "chopped it up" to obtain the oil, and the remains, with the exception of the tail, were set afloat and drifted out to sea beyond possibility of recovery. From a sketch kindly sent us by Miss Rose Smith and some interesting particulars supplied by Mr. Winson, there is not the slightest doubt that the animal was Sowerby's Whale, probably a full-grown male.

As no full description of the external appearance of this species has ever been given, we add the following particulars from the scanty materials we have been able to glean. The total length was 15 feet 9 inches, measured along curve; the greatest girth, which was about midway between the two extremities, was 8 feet; from that point it gradually tapered to about 15 or 18 inches at the insertion of the tail, which was nearly 3 feet across, its posterior border being entire and slightly convex in the centre. The girth just behind the head was between 6 and 7 feet. These measurements, with the exception of the first, are only approximative.

The head is said to have been highest at the blowhole, the beak tapering and 15 inches in length; the lower jaw projected beyond the upper, and was armed with two teeth, a little over 1 inch in length, and situated about midway between the end of the jaw and the opening of the mouth.

The skin is described as very smooth and polished; very dark slate colour or nearly black on the top of the head and along the back, the sides a lighter shade of slate colour, and the under parts much lighter still, but not quite white; the end of the beak and lower jaw rather lighter in colour than the upper portion of the head. Winson significantly speaks of the teeth as "tusks," and states that the animal uttered no sound. Upon inquiry Winson also states that he noticed a number of irregular marks on the sides and belly about 2 feet in length and a quarter of an inch wide; they were lighter in colour than the outer skin of the parts on which they appeared, and had "something the appearance of narrow strips of the skin having been removed;" to this cause he at the time attributed them, not knowing that they were "natural marks."

As before observed, the individuals of this species have hitherto always been so mutilated before they were seen by any person competent to give a full and accurate description of their external characters, that such a description is still a desideratum; but Prof. Turner, from such fragmentary accounts as have been given by different naturalists and from the specimen he was then describing, has compiled the following summary, which we venture to quote entire from his paper sent to the Royal Society of Edinburgh on January 30, 1882\* :—

"Length in adult 14 to 16 feet. Beak long and slender. Head swelling out considerably behind the beak. Body elongated. Back dark bluish grey or slate-coloured, sides lighter, belly whitish. Grey or whitish streaks and spots scattered irregularly on the sides. Dorsal fin nearer the tail than the head, falcate posteriorly. A dorsal keel in front of the tail. No median notch between lobes of the tail. Flipper small; both its anterior and posterior borders convex. Blow-hole semilunar, concave forward, not quite symmetrical. Mouth-slit straight in front, but concavo-convex further back. A pair of furrows converging in front on the under surface of the throat. A pair of laterally compressed teeth protruding, in the male, between the lips at the side of the beak; not visible in the female. Rudimentary functionless teeth present in the gum both of the upper and lower jaws."

From the second Shetland specimen Prof. Turner was enabled to add very little to the above description, as it reached him flensed and cut into blocks; but the skin of the tail was almost black on both the dorsal and ventral surfaces, and on either surface a mesial keel was present. The posterior border of the tail was convex and not notched in its middle part, and

\* 'Journal of Anatomy and Physiology,' April 1882, pp. 462, 463.

the blowhole in this individual was transverse instead of semi-lunar. The flipper was 1 foot 10 inches in length from the head of the humerus, and its greatest diameter  $6\frac{1}{4}$  inches; it came almost to a point at the tip, the anterior border being slightly convex; the posterior border for 7 inches from the axilla was almost straight and then rapidly sloped forward to the tip; the colour on both surfaces was "like that of a well-blackened boot." The above particulars comprise all that is known with certainty with regard to the appearance of this singular animal.

The Ziphioid whales to which the genus *Mesoplodon* belongs were very numerous in the seas surrounding Great Britain during the period in which the Suffolk Crag was deposited, as testified by the abundance of their remains found in that formation; but in the present day, with the exception of one species of *Hyperoodon*, which congregates in considerable numbers in the Arctic seas in summer, and which not unfrequently makes its appearance on the British coasts in autumn, the other members of the subfamily are amongst the least known of any of the Cetaceans found in our seas. Of the genus *Mesoplodon* only one species has hitherto been met with in the North Atlantic, viz. that which forms the subject of this notice, unless the Cetacean found dead in the British Channel about the year 1840 (the skull of which is in the Museum at Caen) and described by Gervais under the name of *M. europæus*, should prove to be distinct; but of the seven or eight species known, three at least are well established, and some fairly abundant in the seas extending from the Cape of Good Hope to New Zealand; others are of great rarity and at present little known. Prof. Flower has contributed an excellent monograph of this genus, which will be found in the tenth volume of the 'Transactions of the Zoological Society,' in which he points out certain well-marked characters common to the whole genus, subject to slight specific modifications; one of these is the remarkable mandibular tooth already referred to, and which, whether situated near the apex of the mandible as in *M. Hectori* or near the hinder edge of the mandibular symphysis as in *M. bidens*, always forms a good distinctive character. In the fully adult male of the species under consideration these teeth project about 2 inches above the gum, are laterally compressed, triangular in form, the apex at first directed backwards and then slightly forwards, the tooth projecting tusk-like outside the upper lip. In *M. Layardi* this singular form of tooth reaches its extreme, and is described by Prof. Turner\* as reaching a

\* "Form and Structure of the Teeth of *Mesoplodon*," 'Journal of Anatomy and Physiology,' xiii. p. 469.

total length of 14 inches,  $6\frac{1}{2}$  of which were included in the alveolus and gum; at the point at which it emerged from the alveolus it was  $3\frac{1}{2}$  inches in breadth, and continuing its growth in strap-like form "it curved obliquely backwards, upwards, and inwards," the two teeth crossing each other on the dorsum of the beak, thus greatly restricting the motion of the lower jaw.

In addition to the two remarkable teeth just described a number of rudimentary and functionless concealed teeth have been detected in *M. bidens*, and in a New-Zealand species (*M. Grayi*) such teeth are said to be constant; with regard to this interesting fact Prof. Flower observes \*, "We have here the permanent retention of a condition intermediate between that of the irregular, completely concealed, probably only temporary, and quite functionless teeth, mentioned above [*M. bidens*], and the normal state of dentition of the true Dolphins, and it is especially interesting that this should have been met with in a member of the genus otherwise least modified from the Dolphins."

Prof. Turner, in 1882, enumerates thirteen instances of the occurrence of this species, three of which were met with in Scotland, two on the Irish coast, and the remainder on the Continent or in the United States. Since that time one other Scotch specimen has occurred, also the subject of this communication, which is believed to be the first record of its occurrence on the English coast. The following is a list of the known occurrences, with particulars as to the locality &c., compiled from Prof. Turner's paper and other sources.

1. The first recognized example of this species came on shore at Brodie, in Elginshire, in the year 1800; the imperfect skull and a drawing of the animal were forwarded to the late Mr. Sowerby, by whom they were figured and described in his 'British Miscellany,' vol. i. p. 1, in 1806, under the name of *Physeter bidens*. It was an adult male 16 feet in length. From Mr. Sowerby's collection the skull passed through Dr. Buckland to the Oxford Anatomical Museum, where it now is.

2. A female 15 feet long, stranded at Havre on Sept. 9, 1825, the skull of which is preserved in the Paris Museum. It was described by De Blainville (Nouv. Bull. Sci. Soc. Philom. t. iv. p. 139).

3. A male from Sallenelles, Calvados, in the north of France, also in the year 1825, the skull and part of the skeleton of which are preserved in the Museum of Caen.

\* Trans. Zool. Soc. x. p. 425.



4. A young female stranded at Ostend on 31st Aug., 1835, the complete skeleton of which is in the Brussels Museum.

5. The second British specimen was stranded in the Bay of Brandon, Kerry, on the 9th of March, 1864. It was a male 15 feet in length; unfortunately it was destroyed before it was seen by a naturalist; but Dr. Busteed succeeded in securing part of the head, which had been removed immediately behind the frontal portion of the skull, and photographed it in several positions while yet quite fresh. The photographs were reproduced in a paper by Mr. Andrews, published in the 'Transactions of the Royal Irish Academy,' xxiv. 1869.

6. The mandible of a specimen taken on the Norwegian coast is preserved in the Museum of Christiania, and figured and described by Van Beneden (Bulletin de l'Acad. Royal de Belgique, t. xxii. 1866).

7. A specimen, believed to be the first met with in America, was stranded on Nantucket Island, Mass., U. S., about the year 1867, the cranium of which is in the Harvard College Museum.

8. A complete skeleton of a male in the Gottenburg Museum from Skagerak, Norway, in 1869.

9. A second Irish specimen occurred 31st May, 1870, five or six miles from the site of the first capture in Brandon Bay, and was also observed by Dr. Busteed. It was a male 17 or 18 feet long, and, like the previous specimen, was hacked to pieces so as to be of little service to science. From each tooth of this animal depended a bunch of cirripeds believed to be *Conchoderma aurita*. It is recorded by Mr. Andrews (Proc. Royal Irish Acad. ser. 2, i. p. 49).

10. The skull of a specimen preserved in the Museum of Science and Art, Edinburgh, is thought by Prof. Turner, "not unlikely" to have belonged to an animal captured in the Scottish seas (Trans. Royal Soc. Edinburgh, May 20, 1872).

11. A female captured on 3rd Feb., 1880, at Herringholm Strand, on the east coast of Jutland, was described by Prof. Reinhardt, but the skeleton was not preserved.

12. On the 9th Nov., 1881, a male about 15 feet long was found floating dead off Vanholmen, near Marstrand, Sweden; like previous specimens it was partly flensed before being seen by Dr. Malm, who, however, has given an excellent description of what he saw (quoted by Prof. Turner); he also secured the skeleton for the Gottenburg Museum.

13. This specimen forms the subject of a communication by Prof. Turner to the Royal Society of Edinburgh, under the date of Jan. 30, 1882, and reprinted in the 'Journal of Anatomy and Physiology' for April 1882, p. 458 *et seq.* It

was seen struggling near the shore in Urafirth Voe, North-mavine, on the west coast of the main island of Shetland, in April 1881, and speedily captured. Mr. Thomas Anderson, who saw the animal in the flesh, furnished Prof. Turner with a description of its external appearance, and procured the skeleton for the Anatomical Museum of the University of Edinburgh, where it is now preserved, having been fully described in the communication before referred to. The animal was a male about 14 feet long.

14. On the 25th May, 1885, a second Shetland specimen of this species was taken in Voxter Voe, about 13 miles from the spot where the first specimen was secured; it was a male about 15 feet 8 inches long, and is said to have been accompanied by a young one about 7 feet long, which escaped. This specimen, although it was flensed and cut into sections before it reached Prof. Turner, enabled that anatomist to give some very valuable information on the anatomy of the soft parts as well as to supply some deficiencies in his previous description of the skeleton. This he did in a communication to the British Association at the Aberdeen meeting, printed in the 'Journal of Anatomy and Physiology' for Oct. 1885, p. 144 *et seq.* The complete skeleton of this adult male is articulated in the Anatomical Museum of the University of Edinburgh.

15. The most recent occurrence of this species is the specimen referred to in the early part of this communication.

VII.—*On Vulsella, a Genus of Acephalous Mollusca.* By ALFRED HANDS COOKE, M.A., Curator in Zoology, Museum of Zoology and Comparative Anatomy, Cambridge.

At least nineteen recent species of the Genus *Vulsella* have been described. Lamarck, to whom the genus is due, described six (*lingulata*, *hians*, *rugosa*, *spongiarum*, *mytilina*, *ovata*: Anim. sans Vert. ed. 2, vol. vii. p. 266 f.). Conrad added one (*Nuttallii*); one (*Hügelii*) appears due to Parreiss; while Reeve, in the 'Conchologia Iconica,' vol. xi., described eleven new species (*pholadiformis*, *isocardia*, *tasmanica*, *attenuata*, *crenulata*, *limæformis*, *phasianoptera*, *rudis*, *lingua-felis*, *corollata*, *trita*) from the Cumingian collections, the types of which are now in the British Museum.

I am not aware that any note of suspicion, save one, has ever been sounded with regard to the genuineness of any of these so-called species. That was by G. B. Sowerby the elder, in 1825. Writing after Lamarck's work had been